Preliminary Draft

CIVIL AFFAIRS HANDBOOK

on

F R A N C E

Section Thirteen

on

P U B L I C H E A L T H A N D S A N I T A T I O N

Prepared by
Office of Strategic Services

for

Military Government Division
Office of the Provost Marshal General

Preliminary Draft

INTRODUCTION

Purposes of the Civil Affairs Handbook.

International Law places upon an occupying power the responsibility for maintaining civil order in the areas occupied.

The basic purposes of civil affairs officers are thus (1) to assist the Commanding General of the combat units by quickly establishing those orderly conditions which will contribute most effectively to the conduct of military operations, (2) to reduce to a minimum the human suffering and the material damage resulting from disorder and (3) to create the conditions which will make it possible for civil government to function effectively.

The preparation of Civil Affairs Handbooks is a part of the effort to carry out this obligation as efficiently and humanely as is possible. The Handbooks do not deal with planning or policy. They are rather ready reference source books of the basic factual information needed for planning and policy making. For these reasons, it should be clear that the data contained in this section does not imply any given program of action.

Revision for Final Publication.

Significant area information is immediately needed to make certain that it is in hand whenever events require it.

Arrangements were therefore made with the cooperating agencies to organize all immediately available material in accordance with a prepared outline. Hence, this section on Public Health and Sanitation in France should be considered a preliminary draft. As more detailed or more recent material becomes available, especially as to the practice of public health administration on the local level, it is to be incorporated into the handbook on France as a whole.

OFFICERS USING THIS MATERIAL ARE REQUESTED TO MAKE SUGGESTIONS AND CRITICISMS INDICATING THE REVISIONS OR ADDITIONS WHICH WOULD MAKE THIS MATERIAL MORE USEFUL FOR THEIR PURPOSES. THESE CRITICISMS SHOULD BE SENT TO THE CHIEF OF THE SURVEY AND RESEARCH SECTION, MILITARY GOVERNMENT DIVISION, P.M.G.O., 2805 MUNITIONS BUILDING, WASHINGTON, D. C. (OR PHONE WAR DEPARTMENT EXTENSION 76370).

F R A N C E

PUBLIC HEALTH AND SANITATION

CONTENTS

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PUBLIC HEALTH AND SANITATION ---- FRANCE

a. Public Health Organization and Services.

(1) National Government. Until the summer of 1940, the central agency in charge of public health in France was the Ministère de la Santé publique (Ministry of Public Health), which was responsible for carrying out all legislative measures covering public health and infectious diseases; social hygiene, including campaigns against tuberculosis, cancer, venereal disease; medical poor relief; maternal and child welfare; the supervision of physicians, dental surgeons, nurses, midwives and pharmacists; the control of drugs, serums, poisons, food and drinking water.

Certain special health services fell within the jurisdiction of departments other than the Ministry of Health: the medical services of the army and navy were administered by the Ministries of War and Marine, respectively; colonial medical services by the Ministry of Colonies. The study of epizoötic diseases and certain questions connected with food and milk were handled by a branch of the Ministry of Agriculture. Industrial diseases were the concern of the Ministry of Commerce and Industry; workshop and factory sanitation, of the Ministry of Labor; the medical inspection of school children, of the Ministry of Public Instruction.

The personnel of the Ministry of Health was purely administrative, having no technical officers with special qualifications in public health or hygiene. Attached to the Ministry, however, was a group of technical bureaus known as the Services centraux d'hygiène sociale (central public health services). These services, which undertook the technical study of various health questions, included:

(a) a Central Service for the prevention of venereal diseases;

(b) a Central Nursing Bureau, responsible for all questions concerning nurses, social workers, visiting nurses;

(c) an Information Service for the use of public health workers;

(d) a Central Service of Technical Studies for the promotion of research work of public health interest;

(e) a Propaganda Service, which organized national health propaganda campaigns and coordinated the work of private agencies such as the National Anti-Tuberculosis Committee, the National Anti-Venereal Disease League, the National Anti-Cancer League.

The Minister of Health could also consult with the Conseil supérieur d'hygiène, a purely advisory body consisting of representatives of the Ministry of Health and other government departments, together with the dean

of the Paris Faculty of Medicine, the director of the Paris School of Pharmacy, professors of public health of the principal medical schools, and representatives of the professions. The Council advised the Minister on matters of general health and sanitation, epidemic diseases, industrial and professional health, food and drinks, the practice of medicine and pharmacy. Besides the Supreme Council, there were a number of specialized advisory committees concerning themselves with tuberculosis, venereal disease, cancer, the birth rate, etc.

It will be noted from the Health Ministry's range of activity that in France public health and social welfare were on the whole not separate fields. France provided public medical relief on a large scale. Under the Law of 15 July 1893, every sick person without financial resources was entitled to receive free medical assistance at home or in a hospital, the cost to be carried by the commune, the department or the State, depending upon his place of residence. Other laws required the commune, department, or State to provide assistance and medical care to the aged, infirm or incurable; to wounded war veterans; to expectant and nursing mothers; to tubercular or mentally ill indigents; to children whose parents were dead, had abandoned them, or were temporarily or permanently unable to support them. In addition, the Law of 5 April 1928 (amended in 1929 and again in 1930) provides for a compulsory national health insurance system applying to all wage-earners whose annual wage is less than 30,000 francs ($690 at official exchange rate, June 1943).

The pre-war public health services of France were in theory highly centralized, although during the 1930's centralization was somewhat relaxed, and public health services were coming more and more under the control of departmental and communal administrations. Responsibility for the execution of the public health and welfare laws lay with the departmental prefects, who were State officials appointed by the Ministry of the Interior to represent all Ministries of the national government. Inspectors-general from the Ministry of Health visited the departments periodically to make certain that the national health laws were being carried out, and from time to time conducted nation-wide surveys on the condition of particular services. The hospitals, hospices for the aged, clinics, dispensaries and other services of treatment and assistance, were set up within the framework of the department or commune. The costs of health administration were divided among the State, the departments, and the communes, and the Minister of Health could exert control over the local services by granting or denying financial support from State funds.

During the 1930's expenditure on public health and social welfare in France increased very considerably, and by the end of the decade the appropriation for the Ministry of Health amounted to more than 1,600,000,000 francs. The principal items in the Ministry of Health

budget for 1939 (total: Frs. 1,623,449,256) were as follows:

Central administration	Frs.	23,129,300
Assistance in re maternal, infant and child care		175,000,000
Aid to large families		457,000,000
Aid to families wholly dependent on service men		116,000,000
Care of aged, infirm, incurable		318,000,000
Free medical care		166,000,000
Tuberculosis: prophylaxis*		20,000,000
Aid to tubercular		46,000,000
Cancer prophylaxis*		2,500,000
Venereal disease prophylaxis**		15,000,000
Support of the insane		208,000,000
Epidemic control**		3,796,000
Miscellaneous subsidies***		19,160,000
Health and welfare services in Alsace and Lorraine		42,586,000

* These items represent State participation in support of departmental and communal institutions, clinics, etc.
** State subsidy of departmental and communal institutions.
***Housing, bacteriological laboratories, national charitable institutions, nursing and social service schools, state-owned or approved thermal establishments, etc.

In the fall of 1940, and again in 1942, the Vichy regime passed laws altering the administration and organization of the public health services in France. The responsible government department is the Secrétariat d'État à la Famille et à la Santé (Secretariat of State for Family and Health), which coordinates all health services, public and private.

Under the new laws, the country is divided into twenty sanitary regions. In each region there is a director, who directs all services pertaining to domestic welfare and health and is responsible to the Secretary of State for Health. Each regional director of domestic welfare and health is assisted by one or several inspectors-general of health, medical inspectors, inspectors-general of domestic and child welfare, administrative inspectors of public charities, and various deputy-inspectors. The regional directors and inspectors-general are appointed by decree. The other inspectors are selected by the Secretary of State on the basis of competitive examination.

The Vichy scheme of organization gives the regional directors dictatorial powers in administering the health and welfare services of their regions. They have power to control and regulate all medical and sanitary establishments, agencies and services, both public and private, within their districts, including all personal services, professional and otherwise, and the appointment of all personnel concerned with maintaining public health and hygiene.

With the new regional organization, the former departmental services of hygiene inspection, the services of the municipal bureaus of hygiene, the maritime and air sanitary services, the frontier sanitary posts, and the departmental services of inspection of public assistance were discontinued.

This organization of the public health administration is of German inspiration and has primarily a political purpose. It has left practically untouched the basic laws applying to health and medical assistance, as well as the social and health insurance system (the wage limit for which has been raised and the qualifications for which have been simplified). There is, as under the Republic, an advisory Hygiene Council concerning itself particularly with "social ills." This is apparently a new body (the old Supreme Council of Public Hygiene seems to have been in abeyance since 1940), composed of 100 members appointed for three years and grouped in six commissions. The Council is at the disposition of the legislative authorities for advice on: maternity and childhood, tuberculosis, venereal disease, cancer, alcoholism, health education.

Note on the health administration of ports and frontiers:

To protect the population against the introduction of diseases by sea, the French coast was, up to the summer of 1940, divided into five sanitary districts administered by the service maritime sanitaire (maritime sanitary service), which was directly under the Ministry of Health. Each district was supervised by a medical director with his headquarters at the most important port in the area. These coastal health services were responsible for controlling infectious diseases, for immunization, for the disinfection and fumigation of vessels. The coastal sanitary districts, with their headquarters, were:

1) Departments of Pas-de-Calais and Nord; headquarters: Dunkirk;

2) departments of Calvados, Eure, Manche, Seine-Inférieure, Somme; headquarters: Le Hâvre;

3) departments of Finistère, Côtes-du-Nord, Ille-et-Vilaine, Vendée, Loire-Inférieure, Morbihan; headquarters: St. Nazaire;

4) departments of Landes, Gironde, Charente-Inférieure; headquarters: Pauillac;

5) departments of Alpes-Maritimes, Gard, Hérault, Aude, Pyrénées-Orientales, Corsica, Var, Bouches-du-Rhône; headquarters: Marseille.

After the war of 1914-18, sanitary services were also organized at the land frontiers of France, with special posts for the medical examination and, if necessary, disinfection of immigrants.

Since the fall of France and the German occupation of most of the French coastal area, these services have been discontinued.

(2) Departmental and District Administration (pre-Vichy). The prefects of the ninety departments of France were responsible for all public health services within their respective departments and for the appointment of all public health personnel. In each department the prefect was assisted by an advisory body known as the Conseil départemental d'hygiène (departmental health council), consisting of three doctors of medicine (of whom one naval or military medical officer), a pharmacist, an engineer, an architect and a veterinary surgeon. Each of the 281 arrondissements into which the departments are divided was defined as a conscription sanitaire (sanitary district) and possessed a commission sanitaire (sanitary commission) presided over by the sub-prefect and including a doctor of medicine, an architect or other representative of the professions, and a veterinary surgeon.

It was up to the prefect to establish a sanitary code, which was drafted by the departmental health inspector in consultation with the health council, to put into effect the national health regulations within the department. The mayors of the communes were expected to carry out these regulations under the supervision of the prefect and his health inspector.

The departmental organization was required by national law to include bureaus for the administration or supervision of: free medical care and other forms of obligatory public assistance, food and drug control, epidemic control, the practice of medicine and pharmacy, the enforcement of building and sanitation laws -- as well as for the collection of vital statistics. Each department was required to maintain a departmental smallpox vaccination service and a disinfection service with at least one post in each sanitary district, able to meet demands for service within six hours.

Up to 1935 the departments were not required to have technically-trained health personnel (outside of the members of the advisory commissions). In that year, however, the appointment of full-time departmental health inspectors was made compulsory. Inspectors and deputy-inspectors, who had to be physicians, were recruited by competition, and were required to have a diploma in public health from one of the medical faculties giving public health courses (Paris, Lyon, Nancy, Montpellier, Algiers).

Outside of the services required by the national laws, departmental health organization was not uniform throughout France. Many of the departments set up offices d'hygiène sociale (public health bureaus) as an outgrowth of the anti-tuberculosis legislation of 1916 and 1919 and of the work of private welfare agencies. In some departments these bureaus limited their activities to tuberculosis control; in others, where the direction of the "public health bureau" and that of the departmental health inspection service

were in the same hands, they undertook extensive social hygiene work in cooperation with the departmental health authorities.

In a certain number of departments, full-time médecins de circonscription or district health officers, were appointed to work under the departmental inspector. Sometimes there were several such officers in a district, each one specializing in a particular field -- tuberculosis, venereal disease, medical inspection of schools, etc.; in other cases, one medical officer handled the various aspects of district health. Some sanitary districts had also a special service of medical personnel to study epidemic diseases and to initiate control measures in case of any epidemic outbreak.

All departments had anti-tuberculosis organizations: sometimes these were part of the departmental health service; sometimes they were private agencies working closely with the departmental authorities. Whether its anti-tuberculosis organization was public or private, each department had at least one dispensary which maintained a consulting clinic, facilitated admission into sanitoria for tubercular patients and carried on an educational campaign.

. Many departments set up health centers which included consulting clinics not only for tuberculosis, but also for child care, cancer, venereal disease. Many also had visiting nurses, specializing in tuberculosis or in child care, attached to the office of the public health inspector. Finally, some departmental health organizations established general medical and bacteriological laboratories, supported by State subsidies.

Little information on departmental expenditures for public health is available. Departmental budgets for public health and assistance totaled frs. 1,440,022,213, of which frs. 82,851,609 was for public health.

With the Vichy government's laws on public health organization (see pp. 3-4), the former administrative set-up of the departments was discontinued.

(3) Local Governments. Under the basic public health law of 10 February 1902, the mayors of the 38,000 communes (which vary in size from less than 500 population to nearly 1,000,000 -- and in the case of Paris nearly 3,000,000) were made responsible for enforcing the national health regulations. The departmental administration had to draft a sanitary code and to provide smallpox vaccination and disinfection services, but beyond these services the matter of public health and sanitation was left largely up to the mayors. The law required them to carry out the measures of the departmental sanitary code with reference to the notification and control of infectious diseases, the sanitation of buildings and private thoroughfares, the purity of drinking water, and the disposal of garbage.

The law of 1902 did not require technically-trained personnel to enforce the sanitary codes in communes of less than 20,000 population. In small rural towns and villages, unless they were located in departments with district health inspectors, the health regulations were likely to remain a dead letter, although their enforcement probably improved after the appointment of departmental health inspectors became compulsory. The mayors could, after due process of law, impose severe penalties, including expropriation, for violation of the sanitary laws, but in practice the judicial procedures were so complicated that penalties were seldom carried out. The law of 1902 also provided that if the mortality in any commune exceeded during three consecutive years the mean mortality for the country as a whole, the prefect should instruct the departmental health council to investigate the causes and to frame measures for improvement. Here again, however, the provision was seldom carried out.

Towns of more than 20,000 population, as well as medicinal watering places of more than 2,000 population, were required to establish Bureaux municipaux d'hygiène, or municipal health offices, under the direction of the departmental health inspector. Smaller communes could be directed by the prefect to establish inter-communal health bureaus. The heads of these bureaus were appointed by the Supreme Health Council, but were not required to have medical training. The municipal health offices were not organized according to any uniform plan. The larger centers had well-organized and -equipped offices with staffs of qualified physicians and health visitors, but in the smaller towns the bureau directors were likely to be part-time medical men or even persons not medically qualified.

The law of 10 February 1902 required the municipal health offices to enforce and administer the national regulations concerning vaccination, disinfection, and control of infectious diseases; sanitation of buildings, hotels, boarding houses, drinking water, streets, sewers, garbage disposal. The larger towns went beyond these requirements and took onchild care -- including often establishment of municipal nurseries; control of milk for babies; medical inspection of school children; venereal disease prophylaxis and treatment. In a few towns the health bureaus handled the administration of free medical care. A few health bureaus took care of food control, inspecting slaughter houses and wholesale markets and supervising the quality of milk (although this inspection was usually carried out by the municipal veterinary service).

There are no figures available on the aggregate expenditure of communes for health purposes. The following extracts from the 1937 budgets of the cities of Bordeaux (pop. 258,348) and Lyon (pop. 570,622), both of which had extensive municipal public health services, will give some idea of the amount and division of local health expenditures.

Budget of the City of Bordeaux for 1937

Public assistance and social welfare		Frs. 16,448,951.05
including: free medical care	Frs. 9,700,000	
aid to aged, infirm, incurable	3,750,000	
maternal and child care, subsidies to private charitable institutions	1,150,000	
Public health and protection of children		1,795,909.80
including: medical inspection of schools, maintenance of five anti-tuberculosis dispensaries, two anti-venereal disease dispensaries; smallpox, diphtheria and rabies vaccination services		
		Frs. 18,244,860.85

Health Budget of the City of Lyon for 1937

Bureau d'hygiène: general administration (salaries of director, assistant director, medical inspectors, building inspectors, municipal laboratory, etc.)	Frs. 914,252
City's share of cost of child welfare (orphans and others without support)	1,400,000
City's share of cost of indigent insane	4,700,000
City's share of cost of care of aged, infirm, incurable	15,632,864
City's share in aid to large families	30,000
City's share in aid to expectant and nursing mothers	374,638
Birth bounties	100,000
Care and treatment of subnormal children	126,772
Cost of transporting indigents to and from hospitals	20,000
Orphan placement service	70,000
Cost of free medical care of city's indigents in public hospitals	15,840,000
Cost of free medical care of city's indigents in private hospitals	1,500,000

Night medical and pharmaceutical service	Frs.	77,724
Maintenance of city institutions (orphans, aged, incurable, incapacitated workers; municipal lodging house)		1,849,587
City institutions for mothers and infants (unmarried mothers' home; day and full-time nurseries, municipal restaurants for nursing mothers, free milk for infants)		2,198,843
Subsidies: anti-tuberculosis dispensary) anti-rabies service) of the Institut bactériologique		93,150
	Frs.	45,113,219

Lyon has its own municipal garbage-incinerator and slaughterhouse; inspection is under those departments.

The City of Paris had a special regime, both as to municipal administration and as to the organization of public health. Public assistance, home care, all hospitals and hospices, were administered by an autonomous body called the Administration générale de l'assistance publique. The director of the Assistance publique was appointed by the Minister of Health of the Republic. He was assisted by a supervisory council composed of delegates from the Municipal Council of Paris, representatives of the main judicial and administrative bodies in the city and distinguished members of the professions.

The Assistance publique administered free medical care, assistance to abandoned children and to the aged and infirm; it ran pre-natal and post-natal clinics and various other consulting services (e.g. cancer, tuberculosis); it collaborated with the Office public d'hygiène of the Department of the Seine on anti-tuberculosis and anti-cancer work; maintained rest homes, insane asylums, sanatoria (some of these at the seashore or in the mountains); it handled unemployment relief. By agreement with the communes outside of Paris but within the department of the Seine, it cared for their indigent sick.

The public assistance administration drew its funds from: revenues from capital and real estate; an annual subsidy from the city which amounted in the late 1930's to more than 500,000,000 francs; special subsidies from the city for building or modernizing hospitals; payments by patients insured through the national social insurance system; payments by the State, the Department of the Seine and by communes outside of Paris for the care of non-Parisian patients in Paris hospitals. The 1940 budget of the Assistance publique, as projected, was 988,957,025 francs (which included 417,760,000 francs for unemployment relief).

b. Assistance of Private Agencies. There are a large number of very active private charitable and health organizations, among them the Associations d'hygiène sociale (social hygiene associations) and the Red Cross Society, both of them widely distributed throughout the country. There are also a number of important health groups specializing in particular fields and operating in close touch with the national and local health authorities. The most notable of these are:

Comité national de défense contre la tuberculose, which carries on educational campaigns, helps subsidize dispensaries and sanatoria and has a school to train visiting nurses. In practically every department there is a committee affiliated with the Comité national; usually these are known as Comités départementaux d'hygiène sociale et de lutte antituberculeuse. The departmental health inspector is often a member of the board or even secretary of the committee. The departmental committees collaborate with the departmental health authorities; may have their own dispensaries, if there is not an Office d'hygiène sociale attached to the prefect's office.

Comité national de l'enfance, which interests itself especially in the prevention of tuberculosis in children; and the Oeuvre du placement des Tout-Petits, which places the infants of tubercular parents in healthy foster-families.

Institut prophylactique, which carries on educational campaigns in the field of venereal disease, does research and maintains dispensaries; Ligue national contre le péril vénérien, in the same field. Both of these agencies work in close touch with the Central Service for the Prevention of Venereal Disease of the Health Ministry.

Ligue française contre le cancer, which is primarily a propaganda agency.

The American Friends' Service Committee (known since the severing of diplomatic relations as the Secours Quaker) and the Unitarian Service Committee have included some medical assistance in their welfare work in the former unoccupied zone. The two groups together, at least up to November 1942, provided a visiting-nurse service in some villages of southern France otherwise deprived of medical care.

c. Medical and Related Care.

(1) Medical Personnel. In 1937 there were some 27,400 physicians in France, of whom over 6,800 were in Paris. Over 400 of the total number were engaged full-time in public health work in the departments or communes; another 500 were part-time physicians in social hygiene dispensaries.

It is impossible even to estimate how many physicians there are in France at the present time. All French doctors were subject to call for military service upon the outbreak of the war. Many are now war prisoners in Germany, while others have been requisitioned, as have nurses, pharmacists, and dentists, for service there along with French industrial workers. All reports since the Armistice indicate a severe shortage of medical personnel.

For the most part, French physicians were well trained up to the war, although American medical opinion seems to consider their standards of practice not up to those of the United States. No physician might practice anywhere in the Republic without a State diploma, which was conferred after examination at the end of a five-year medical course. The most notable characteristic of the French medical curriculum was a compulsory training in diagnosis and practice in the hospitals and clinics which lasted the full five years along with theoretical studies. There were nine medical Faculties in France and fifteen Schools of Medicine (of which eleven were preparatory -- that is, offering only the first three years). The fifth year had to be spent at one of the nine Faculties or (pre-1940) with permission of the Faculty, it could be spent abroad. There were 1,650 medical students in 1937; in 1942 there were more than 3,000, although Jewish and foreign students had practically been eliminated. Early in 1943 the Vichy government introduced a law reducing the number of medical students.

It is worth recalling that French medical research has contributed immeasurably to medicine throughout the world; Pasteur, Pierre and Marie Curie, Irène and Frédéric Joliot-Curie are only a few of the great names.

On August 16, 1940, a new law was passed regulating the practice of medicine. Another new law, passed October 16, 1940, instituted an "Ordre des Médecins" (Order of Physicians). The purpose of both laws was primarily political, tending to place medical practice under the control of the State. Apparently, however, the Vichy government has not been able to control the Order of Physicians to its satisfaction. It is reported that the government ordered home attention given to war invalids only by physicians approved by the secretariat-general for ex-service men, and that at least one departmental council of the Order of Physicians protested this "stage in the process of state control." On August 14, 1942, the Government introduced a law to coordinate all health services and facilities, public and private, under the Secretariat of State for Family and Health, thus evidently strengthening its control over physicians.

As to medical personnel other than physicians, the following figures are available for the pre-war period:

Surgeon-dentists:	8,558 in 1936	
Pharmacists:	12,931 in 1938	(figure includes Algeria)
Midwives:	11,286 in 1938,	who because of their training, might qualify as nursing aides.

There seem to be no recent figures on the number of nurses. At the end of 1928 there were about 24,000 graduate nurses, including 11,750 lay nurses, 8,000 nurses belonging to religious orders, 1,600 psychiatric nurses, as well as visiting nurses for child care and tuberculosis. As the number of graduates had been increasing steadily since the institution of a State nursing diploma in 1922, this number must have been considerably larger by the outbreak of the war.

Surgeon-dentists, midwives, and pharmacists, as well as physicians, are required to have a State diploma in order to practice. The dental training course is five years, and the course in pharmacy of the same length. Pharmacies are inspected annually by trained inspectors of the Ministry of Agriculture. Midwives must have two years' training leading up to their diploma, including apprenticeship in obstetrics in a hospital.

(2) Hospitals. According to the latest available official figures, in 1933 there were in France 2,062 public hospitals and hospices (i.e. institutions for the aged, infirm, and incurable) with a total of 260,969 beds. The hospitals and hospices were distributed as follows:

Hospitals:	Paris	42
	Departments	238
		280
Hospices:	Paris	20
	Departments	550
		570
Combined hospice-hospitals:	Paris	7
	Departments	1,205
		1,212

Beds were divided among civilians, military, aged-infirm-incurable, and "assisted children" (i.e. children receiving State aid) as follows:

Civilians:	Paris	26,278
	Departments	100,275
		126,553
Military:	Paris	0
	Departments	12,511
		12,511
Aged-infirm:	Paris	12,612
	Departments	89,129
		107,741
"Assisted children":	Paris	1,965
	Departments	12,199
		14,164

In 1937, in addition to the public hospitals and hospices, there were in Paris thirty-seven independent establishments approved and directly supervised by the Administration générale de l'Assistance publique; that is, they had a semi-public status. These were specialized clinics, hospitals maintained by religious orders, etc. The number of beds in these institutions is not available, nor is the number of such institutions outside of Paris. In addition, there were, in 1937, 122 privately-owned "cliniques" -- small hospitals and nursing homes, maternity hospitals, or establishments for the treatment of nervous disorders or for retarded children -- in Paris, and 63 in the departments. Here again, the total number of beds is not known. Each department has at least one hospital within its borders, or one available to it. Many of these hospitals, especially in the large cities, are modern, and before the war were well equipped. In many towns there were also well-equipped church hospitals.

In 1928, the most recent year for which figures are available, there were 96 sanatoria for pulmonary tuberculosis, with 9,358 beds; 36 of these were publicly-owned.

Most French hospitals and hospices are "public establishments," enjoying an autonomous legal status distinct from the State, the department, or the commune -- though within the framework of the latter. A public hospital or hospice, up to 1940, was created by decree of the Conseil d'état. In all communes except Paris, which had a special regime, the hospitals were administered by an administrative commission presided over by the mayor. The commission appointed the secretary, the superintendent, the medical and surgical staff, but might not recall them without the approval of the prefect of the department. The receiver of the hospital was appointed by the prefect on nomination by the Commission and might be removed only by the Minister of Health.

Hospital funds come from: revenue from capital or real estate; gifts and legacies; patients (the cost of their care being paid by the State, the department, or the commune when they are entitled to free medical assistance); State, departmental, or communal subsidies; miscellaneous funds, as from pari-mutuel. When a commune has not a hospital or hospice of its own, or has inadequate hospital facilities, it may arrange, after consultation with the administrative commission and the prefect, to have its ill or aged cared for in a private establishment.

In Paris, at least up to 1940, all hospices and hospitals were administered by the Administration générale de l'Assistance publique (see p. 9).

Since the passage in 1940 of laws changing the public health organization, all hospitals, public or private, like other health services, are controlled by the directors of health and welfare of the regions in which they are located (see p. 3).

As of November 1942 the German occupying authorities were reported to have requisitioned the following Paris hospitals: Beaujon, Lariboisière, La Pitié, comprising

some 3,300 beds. Beaujon is the newest and best-equipped hospital in Paris (opened 1935); Lariboisière and La Pitié are among the largest and most recently modernized. Hospital space is reported to be very short in Paris and probably will be found so throughout France. Many hospitals may, of course, no longer be operating due to shortage of personnel and supplies or to the destruction of physical facilities.

All Paris hospitals suffer from severe transport difficulties. There are almost no ambulances. Patients are brought to the hospitals with the help of the Police first aid. For the return journey, they are grouped in the same ambulance, which makes a round like a motor bus. Undoubtedly hospitals elsewhere in France have the same problems.

X-ray equipment, both public and private, was widely distributed throughout France before the war. Most of it was of French, German, or American manufacture. There were many portable units, operating on the currents generally available (110 or 115 volts, 3-phase, 50-cycle alternating current). It is possible that much of this equipment has been requisitioned by the German occupying forces.

Throughout France, there are large numbers of boarding schools, public buildings, hotels, and chateaus that might suitably be converted for use as hospitals, provided that adequate water and toilet facilities could be installed.

(3) Stocks of Vaccines, Serums, Drugs, etc.
Since the fall of France, an acute shortage of medical and surgical supplies and equipment has developed. It has been reported that the Germans confiscated much orthopedic and surgical equipment.

Many drugs, chemicals, and other basic supplies are unobtainable or critically low. Druggists are supplied on a quota basis, according to the size of their clientele, and often get less than 1% of their needs. Doctors in making out prescriptions usually give three or four alternatives for every ingredient. Research is going on to determine how far substitutes may be used.

The lack is most seriously felt in the following drugs: caffein, theobromin, bismuth, salts, iodine, camphor, boric acid and derivatives, vaseline, quinine, opium and its alkaloids, glycerin, saccharine, lanolin, cod liver oil, starch, glucose, mustard meal, lactose, tartaric and citric acids, insulin, opotherapic products, and many alkaloids and chemical and vegetable products. Sulfa drugs are only occasionally purchasable. Anesthetics in general are lacking. Still other missing drugs are digitalis, calcium, and phosphorus. The Germans have confiscated all supplies of radium. It is reported that stocks of vaccines are being used up, and the institutions making them are few in number.

There is also an acute shortage of medicated alcohol, and of bandages and surgical dressings, those available being of poor quality. However, it is reliably reported that the American Hospital at Neuilly has developed a new product called "dermophane" to replace ordinary dressings for wounds and burns. This new cellophane material is said to reduce the amount of pus formation ordinarily expected by nine-tenths, and to eliminate excrescences after healing. The dressing can be placed directly on the wound, after wetting, without the use of any tanning material or grease, and can be changed without causing pain. It is possible that the product may be useful for internal wounds in the lungs and larynx.

From the information available, it is apparent that any military forces in France would be obliged to supply all of their own medical and surgical supplies and equipment necessary for the care and treatment of troops, as well as all serums, vaccines, and other biologicals.

(4) Status of Vaccination and Immunization. Under the basic public health law of 10 February 1902, smallpox vaccination is compulsory in France for all children under one year, with revaccination during the eleventh and twenty-first years. In case of war, public calamity or epidemic, smallpox vaccination can be made obligatory by ordinance of the prefects for all those who cannot prove a successful vaccination within the preceding five years. This was done early in 1942 in Paris, where an outbreak of smallpox was checked by intensive vaccination. Every department is required to provide free vaccination service. The manufacture of the vaccine was, and presumably still is, limited by law to the Academy of Medicine and to a small number of laboratories under State supervision.

Anti-typhoid vaccination has been compulsory in the armed forces since 1914. In November 1940, typhoid and paratyphoid injections became obligatory for adolescents entering youth camps and for all persons between ten and thirty in any area menaced by epidemic. Reports from France indicate that these edicts were actually carried out, and that as early as August 1940 vaccination field crews were being sent out from the Pasteur Institute into threatened regions.

Inoculation against diphtheria was made compulsory for school children in 1931, but was widely practiced before that. Since November 1940, anti-tetanus injections have been compulsory with diphtheria vaccinations for children under fourteen; early in 1943 both these vaccinations were due to be made compulsory for persons of all ages. In some areas, it has been reported that the entire population has been inoculated against tetanus, typhoid, and typhus. Before the war, the immunization of new-born infants against tuberculosis with B.C.G. was very widely practiced. This is probably still the case, since the Secretariat for Health is conducting a vigorous campaign against tuberculosis. But it has been reported, in connection with the whole field of immunization, that stocks of vaccines are being used up, and the institutions making them are few in number.

d. Birth, Death, and Disease.

(1) In 1935, 1936, and 1937, latest years for which figures are available, the total number of deaths in France, from all causes, was 658,379, 642,318, and 623,502, respectively. In the same years, the total births amounted to 662,456, 630,059, and 616,863, respectively.

The birth and death rates for the five years before the war are given below. It will be noted immediately that in the years 1935 to 1939, the death rate slightly exceeded the birth rate. The French birth rate has been declining steadily since the last war -- and indeed the population has remained practically stationary since 1881.

	Birth rate	Death rate (per 1,000)
1935	15.3	15.7
1936	15.0	15.3
1937	14.7	15.0
1938	14.6	15.4
1939*	14.6	15.3**

* Provisional figures.
** Excluding war losses.

By the first quarter of 1942 the death rate in Paris had reached 22.2 per 1,000; in the same quarter of 1938, the Paris death rate had been 15.6 per 1,000. The Vichy radio in August 1942 mentioned that deaths in Paris in the first half of the year had exceeded births by 20%. No birth or mortality figures appear to have been published for the country as a whole, but it may be assumed that the increase in the death rate is general. The causes are undernourishment -- food rations insufficient to afford protection against disease; inadequate clothing and shoes; inadequate supplies of coal and wood for heating; overcrowded living quarters; disorganization of the health and medical services.

Deaths from Principal Causes, 1935 and 1936

	1935	1936
Senility*	83,857	80,947
Diseases of the heart	64,989	64,809
Other diseases of the circulatory system	14,317	13,781
Cerebral hemorrhage, cerebral embolism, thrombosis	49,800	48,475
Other diseases of the nervous system	15,855	14,948
Tuberculosis of the respiratory system	44,658	43,161
Cancer and other malignant tumors	39,762	40,220
Pneumonia	28,502	28,251

*French law apparently does not absolutely require a certificate of the cause of death. As the French Penal Code prescribes severe penalties for medical practitioners who divulge information obtained in the course of practice, some French physicians object to certifying the causes of deaths of their patients. Moreover, in rural areas, verification of the fact and certification of the cause of

 (Footnote continued on following page)

Deaths from Principal Causes, 1935 and 1936 (continued)

	1935	1936
Other diseases of the respiratory system, TB excepted	37,545	35,812
Nephritis	18,845	18,623
Diseases of the liver and biliary passages	12,303	12,161
Other diseases of the digestive system	12,633	12,333
Congenital debility and malformations, premature birth, diseases of early infancy	12,930	12,130

Status of birth control:

Birth control has long been practiced extensively in France, as is indicated by the contrast between the relatively high marriage rate and low birth rate:

	Marriages per 1,000	Births per 1,000
1935	13.6	15.2
1936	13.4	15.0
1937	13.1	14.7

as compared with the marriage and birth rates in the same years in the United States:

1935	10.41	17.0
1936	10.70	16.8
1937	11.20	17.1

Contraception is, however, a matter of purely individual concern. There are no birth control clinics, private or public, nor any organizations conducting educational campaigns. French law forbids propaganda or publicity concerning birth control. Abortion is illegal. The State and a number of private agencies, both under the Republic and under the present Government, have done everything possible in the way of propaganda, subsidies to large families, birth bounties, etc., to encourage an increase in the birth rate.

(footnote continued from preceding page)

death are often made by non-medical persons. Hence the large number of deaths attributed to "senility,"or to "natural" or "ill-defined" causes. In 1935 and 1936, 129,553 and 131,709 deaths, respectively, were listed with the cause "not specified or ill-defined." Thus important specific causes, such as tuberculosis, bronchitis, or cancer, may have been hidden by inclusion in these groups.

(2) Number of cases and deaths from certain infectious diseases:

	1938*	1937*	1936		1935	
	Cases	Cases	Cases	Deaths	Cases	Deaths
Typhoid and paratyphoid fever**	4,120	5,868	4,202	1,052	4,203	1,071
Undulant fever***	554	484	436	***	405	***
Measles	37,487	26,791	31,076	1,010	18,413	721
Scarlet fever	18,731	18,728	18,748	279	19,090	326
Diphtheria	16,800	19,187	16,264	1,325	17,431	1,605
Dysentery***	73	129	50	***	45	***
Acute poliomyelitis***	788	592	366	***	502	***
Cerebro-spinal meningitis	408	452	328	***	388	***
Plague	0	0	0	0	0	0
Smallpox (incl. some chickenpox)	2	5	273	10	428	15
Typhus fever	1	1	4	11	1	5

* Causes of death for 1937 and 1938 are not available.
** The number of cases of typhoid and paratyphoid fevers may be low; it is suggested that a mortality rate as high as 25% for these diseases is unlikely.
*** No deaths are given under these diseases, which may mean that no cases ended fatally, or, more likely, that the deaths from these causes are lumped in the statistics under "other infectious or parasitic diseases."

French law requires that the health authorities (i.e. the prefect and sub-prefect in a department, the mayor of a town or village, the prefect of police in Paris) be notified without delay of cases of the following diseases: typhoid and paratyphoid fevers, typhus, smallpox, scarlet fever, measles, diphtheria, military fever, cholera, plague, yellow fever, dysentery, puerperal fever, ophthalmia, cerebro-spinal meningitis, acute poliomyelitis, trachoma, undulant fever, leprosy.

But notification is optional for a number of important diseases -- pulmonary tuberculosis, whooping cough, influenza, pneumonia, erysipelas, mumps, scurvy. Figures for the number of cases are therefore not available. Deaths ascribed to some of these in 1935 and 1936:

	1935	1936
Pulmonary tuberculosis	44,658	43,161
Influenza	7,677	4,487
Pneumonia	28,502	28,251
Whooping cough	836	1,220
Malaria	163	120

(3) Disease Information; Recent Epidemics. The most widespread of all communicable diseases in France is pulmonary tuberculosis, which was reported as causing the death of 44,658 persons in 1935 and of 43,161 in 1936 -- or over 6% of all deaths. Due to the incomplete notification system, these figures are probably understated.

Tuberculosis was most prevalent in rural communities, in the Alps, and in Brittany and Normany. In cities, the tuberculosis death rates were highest in Nantes, Le Hâvre, and Rouen.

Before the war, headway was being made against tuberculosis. Since the fall of France, the disease has increased heavily. Reports vary greatly as to just how great the increase is. One source estimated that the number of dangerous cases had increased from 550,000 before the war to 1,000,000 at the present time; according to this source, those affected are mostly men and women between 50 and 60, whose old lesions decalcify due to lack of proper diet. The French radio has stated that in the regions of France devastated by war, 60% of the children show tubercular tendencies. Many of the war prisoners returning from Germany have developed the disease while in prison camp. It is reported that new cases tend to be galloping, some ending fatally in a few weeks, and many serious forms of tuberculosis are found among the farming population.

At the end of 1942 the Government at Vichy inaugurated an intensified campaign against tuberculosis. It was announced that anti-tuberculosis dispensaries were being equipped with modern technical equipment and specialized personnel, and that mobile units were to be formed. It is not known how successful the campaign may have been, in view of the shortage of equipment in France.

It is probable that the increase in tuberculosis is not particularly important for military operations. The danger of infection becomes of consequence only over a protracted period of time, and principally through the use of native kitchen help.

Since the fall of France, there has been a progressive and rapid decline in the health of the nation. Most Frenchmen suffer from severe undernourishment, and there are reports of losses of weight among adults of as much as 30 or 40 pounds and even more. The present conditions of overcrowding, and the shortage of shelter, food, clothing, fuel, sanitary facilities, and medical care have resulted in the spread of disease and constitute a fertile field for the development of epidemics.

Typhoid fever and paratyphoid fever, which are endemic throughout France especially in the port cities, have become apparently epidemic in parts of southern France. Before the war, the infection was largely ship-borne, but other sources of infection are shell-fish, milk, vegetables grown in unhygienic conditions, and contaminated water. In the fall of 1940 the Government gave the Pasteur Institute a free hand in immunizing the population, and typhoid injections were made compulsory in regions threatened by epidemic. However, there were a number of reports, in the latter part of 1942, of typhoid epidemics in and around Lyon, Montpellier, Toulon-Pont-du-Las, the department of Dordogne. There were also several reports of typhoid in refugee and internment camps.

Influenza, meningitis, and infectious jaundice have also been reported as epidemic. An outbreak of smallpox occurred in Paris, but was checked by intensive vaccination:

reports gave a total of 132 cases in the former occupied zone from February to November 1942. Diphtheria is endemic and in localized areas is epidemic. Malaria is endemic in the entire French coastal region and in the low country of northern France. The Germans have apparently allowed control measures to lapse, so that malaria-carrying mosquitoes have probably multiplied.

Reports in 1942 indicated the presence of epidemic (louse-borne) typhus fever and endemic (flea-borne) typhus fever throughout France. There are known to have been 97 cases in the occupied, and 138 in the former unoccupied zones during 1942. In addition to typhus, trench fever and relapsing fever are prevalent. Echinococcus has appeared occasionally, and may become more frequent. One report stated that some villages of occupied France had flown black flags from church steeples to indicate the presence of plague.

There has been an increase in the incidence of minor infectious diseases: measles, whooping cough, scarlet fever -- as well as influenza -- due to lowered resistance among the undernourished population. Skin infections are common: in particular, impetigo and scabies.

Within recent years a few deaths from leprosy, anthrax, rabies, and trachoma have been reported, but it is not considered that these diseases will be of special importance to troops in France. In 1934, two deaths from yellow fever were reported in Paris, but it is believed that they were imported cases, and did not develop the disease in France proper.

Venereal disease is reported to be widespread among German troops, in spite of strong measures by the occupying authorities. The number of cases among French prostitutes has increased greatly. A system of cards is used for control, but white cards are distributed fraudulently to infected persons, and re-inspection is not sufficiently frequent to make the evidence of the cards reliable. The director of the Institut prophylactique has been quoted as stating that venereal infections among Frenchmen have trebled in the last three years and that 5,000,000 are suffering from syphilis at the present time. It was announced at the end of 1942 that Marshal Petain would shortly sign a decree making treatment compulsory for infected persons, and that venereal disease clinics would be modernized and improved.

Insects and rodents:

In general, the insects and animals important to man are the same in France as in the United States. Their relative importance as carriers of disease is, however, altered by the present disorganization of the social, economic, health, and sanitary structures in France.

Due to overcrowding, lack of soap, and poor sanitary conditions, lousiness is common. The common body louse is the vector of epidemic typhus fever, trench fever, and relapsing fever. Mosquitoes are widely distributed throughout

France. They are most common in the coastal regions, in the low country of Northern France, and in the Loire River Valley, where malaria is endemic. Though malaria has been well controlled in the past, the incidence of this disease may, under present conditions, increase to the point of being important to military forces in the regions mentioned.

Because of the large pet and rat population, fleas are universally distributed throughout France. The rat flea is the vector of endemic typhus fever and plague. The former disease is endemic in all regions; the latter is probably of no consequence at the present time although there has been one report of plague in some villages of Northern France. The common house fly abounds, and is capable of carrying infected material from filth and fecal matter to the food of man.

Rats are encountered everywhere in France, and in many regions are known to harbor the causative organisms of infectious jaundice.

In the southern provinces ticks are prevalent and transmit a tick-borne form of typhus fever.

Below is a list of principal disease-bearing insects to be found in France at the present time.

Insect	Disease
L. bacoti (tropical rat mite) (thought to be restricted to southern Europe, but has been found in Hamburg)	May carry endemic typhus
P. humanus (or corporis) P. vestimenti (body louse)	Epidemic typhus, trench fever, relapsing fever.
P. humanus humanus, or P. capitis (head louse)	Possible vector of epidemic typhus and trench fever.
Aedes maculipennis messeae (principal fresh-water vector of malaria north of Alps)	Malaria
Aedes maculipennis atroparvus (principal salt-water or brackish water vector of malaria north of Alps. Also enters houses.)	Malaria -- responsible for "house malaria" of winter months.
Aedes plumbeus	Minor vector of malaria and vicious biter.
Aedes aegypti (mostly in south of France but also in north)	Dengue, yellow fever.
F. papatasii (mostly in southern France but has been found as far north as Paris)	Vector of sandfly fever or 3-day fever, Oriental sore, and dumdum fever.

Insect	Disease
S. reptans columbaczense (Goblatz fly)	Not carriers of disease, but in April and May of certain years may be so numerous and serious a pest as to interfere with military operations. Bloodsuckers.
F. canicularis and F. scalaris	May cause urinary myiasis.
Musca domestica	Transmits by mechanical means: typhoid, paratyphoid, bacillary dysentery, amebic dysentery, cholera, eggs of parasitic worms.
Musca autumnalis	As above.
Musca stabulans	Accidental infection with myiasis.
Stomoxys calcitrans	May transmit blood diseases; feeds on men and animals.
Sarcophaga Haemorrhoidalis	May transmit intestinal myiasis.
Green-bottle flies	May cause cutaneous myiasis. Sometimes breed in wounds.
Black bow-flies	May cause cutaneous myiasis.
Hypoderma bovis	Occasionally produces cutaneous myiasis and ophthalmomyiasis in humans.
X. cheopis (oriental rat flea) (mostly in southern Europe but occasionally in France)	Principal vector of endemic typhus and plague.
P. irritans	Possible vector of plague.
C. canis and C. felis	Possible vector of plague.
N. fasciatus (European rat flea)	Vector of plague and endemic typhus.
Leptopsylla (coastal regions of France)	Weak vector of plague.
Ants of all sorts	May carry pathogenic bacteria on bodies if they are of those which frequent garbage, etc.
L. tredecimgutlatus (black widow spider) (probably mostly in southern France -- prevalent about privies)	

e. Sanitation.

(1) Departments of Government Supervising Sanitation. Up to 1940, sanitation was mainly the responsibility of the Ministry of Health. On the local level, the national sanitary laws regarding drinking water, sewage, garbage, building, etc., were supposed to be carried out by the mayor and communal officials, under the supervision of the prefect and the departmental health inspector, and of the district health officers, if any. (See paragraph a.(3).) Presumably these services are now under the regional health inspectors.

Food and drug control is the responsibility of the ministry of Agriculture, and is carried out locally by the veterinary inspectors of the departments and the market inspectors and the police in the communes. Legislation is concerned largely with the repression of fraud and misrepresentation and with the elimination of poisonous substances in food or drugs intended for human consumption. However, the cities have municipal meat inspection services, under the supervision of the departmental veterinarian, as well as an inspection service in the markets to control spoilage of foods coming from outside the municipality.

(2) Problems and Control Measures.

(a) Water Supply. There are abundant supplies of crude water throughout France. Springs are plentiful, particularly in the Vosges, Jura, Alps, Pyrenees, and the Massif Central. Many of them are highly mineralized; their water is bottled and distributed widely throughout France, forming an important element in the supply of drinking water. It should be noted, however, that in southern France and the Mediterranean coastal lowland, wells and small streams frequently dry up in the summer, making the matter of water supply a critical one. Along the Atlantic coast, the German Todt Organization is reported to have drilled additional wells for industrial use.

The water supply in most cities and large towns is potable, although in some instances, as in Marseille, the supplies are notoriously bad and are sometimes the cause of epidemics of water-borne diseases. The practice of chlorination seems not to be universally accepted in France, and most communes rely upon water sources considered free from contamination, employing slow sand or gravel as the only method of treatment. When water supplies are chlorinated, this treatment is most commonly accomplished by "Javellisation" or "Verdunisation." It is reported that ozone is used in the treatment of the water supply in about 90 French communes. It should also be noted that large cities and industrial communes frequently have dual water supplies -- one for domestic use and the other for industrial or other purposes.

Water in many smaller towns and villages is obtained from municipal springs or wells and is transported by various means (jugs, pitchers, etc.) to the place of use. Communal

water supply systems, where they exist, often serve only public buildings, business houses and the larger hotels. In March 1937 only a little over a third of the 38,000 communes in France possessed a public supply of drinking water, and from these sources the average available daily quantity was about 65.6 gallons per commune. In most rural communities water is obtained from individual wells which are usually open-topped and subject to pollution. Little care is taken with the location of the well with reference to barns, latrines, fertilizer stores, etc. In the case of rivers, human drinking water is frequently taken from animal watering places. Underground streams and other subterranean bodies of water lie near the surface, and thus are subject to contamination. French law requires the covering of wells and prohibits dumping near springs and streams, but the law is not well enforced.

Under present conditions in France, no source of water supply should be considered safe until all facilities have been thoroughly investigated and approved by proper military personnel.

(b) Sewage Disposal. In 1933, 80% of the towns of more than 5,000 inhabitants had sewage systems, but these were of varying merit and often obsolete. Not more than 25% of these towns had adequate sewage services. In communities of less than 5,000, the proportion of adequate sewage services was estimated at between 1% and 12%, according to the region.

The sewage systems of the large French cities are in the main efficient. But disposal by dilution is still not widely used in France; even large towns still have septic tanks. In small towns and villages, cesspools connected with bacterial filter-beds or humus nitrification beds are common. The residue from these beds is often used on cultivated land. In rural districts, latrines, usually quite unsanitary, are in common use; the night soil frequently is saved and stored with stable manure to be used as fertilizer. Throughout France, sidewalk and building-corner urinals are common; these convenience stations are never screened and are usually filthy; their effluent is discharged into a drain, gutter, sewer, or sometimes a nearby stream.

(c) Waste Disposal. There is no uniformity in the matter of garbage disposal in France. In large cities, as a rule, garbage collection is carried out by the municipality. Some communes turn over the problem to private garbage collectors. And many communes, especially small ones in rural areas, have no organized garbage collection service at all, leaving it up to the individual householder to bury or otherwise dispose of his own waste. In some places, garbage is thrown into the streets and collected irregularly.

In Paris, and in most towns of over 2,000 population, up to the war, garbage was collected daily. Householders were supposed to keep it in closed receptacles, although this regulation was by no means always carried out to the letter. Of Paris garbage, 56% (in 1934) was incinerated in

municipal incinerators, 31% was sold as fertilizer, either as was or after treatment. Outside of Paris itself many communes, even in the Paris area, simply dumped their garbage or made it available to farmers for fertilizer. Other cities -- e.g. -- Toulouse -- also had incinerators; still others (Cannes, Avignon, Aix-en-Provence) maintained scientific fermentation plants to transform garbage into salable fertilizer; and others still had scientific dumps (e.g. Paris-Plage), the garbage being treated with chemical to discourage flies and rats, to fill in swamps and waste areas for future cultivation.

It is possible that where garbage collection services existed, they may have become disorganized due to wartime conditions, the lack of gasoline or horses for trucks, etc.

(d) Food and Beverage Control. Under a law of 1st August 1905 and subsequent decrees, the purity of foods and drugs is, at least in theory, carefully controlled. Misrepresentation and fraud, the manufacture and sale of products harmful to man or animals, is liable to severe punishment. Public markets and slaughterhouses are subject to inspection by municipal inspectors, who may confiscate any spoiled, poisonous or fraudulent food product. Slaughterhouses must be maintained in sanitary conditions; the municipality may require the inspection and stamping of meat slaughtered outside its own slaughterhouses. The departmental veterinarian is responsible for the supervision of animals, the control of animal diseases, etc. in his department. In view of the acute shortage of food in France at present, especially in the cities, it will probably be found that the inspection services have broken down.

The chief danger to food in France before 1940 was contamination by insects, especially the house fly which is a notorious carrier of filth. The normal French wholesale market or slaughterhouse has no protection whatsoever against flies and frequently is a breeding place. The same applies to many retail markets.

Milk is customarily not pasteurized and may be found to be polluted. The French as a rule boil it before consumption. Dairy herds are inspected (since 1935) for tuberculosis, but treatment is voluntary. It was estimated before the war that one-fifth or more of the dairy herd suffered from tuberculosis. As in the case of all food products, the supply of milk is severely limited.

(e) Insect and Rodent Control: for prevalence of disease-carrying insects, etc., see paragraph d. (1) (disease information).

(f) Housing, Bathing, and Toilet Facilities. There are no very recent figures on the amount or condition of housing in France. In 1927 the Ministry of Labor estimated that there was a shortage of 1,000,000 dwelling units, of which 250,000 were needed to replace downright slums. Since then some 200,000 low-cost dwelling units have been built, but little if any slum-clearance has taken place.

Since the fall of France there have been repeated reports of overcrowding, due -- among other reasons -- to the requisitioning of many buildings by the occupying troops and, in northern France, to destruction during military operations. Before 1914, 8.4% of the dwellings in the Paris region were classed as unsanitary; in provincial cities like Lyon, Marseille and Lille the proportion of unsanitary buildings was as high as 20 or 30 percent. There is no reason to suppose that this situation has improved in the past quarter-century, since French municipalities tended not to enforce the expropriation and destruction of unsanitary buildings.

Outside of the better hotels and modern residential quarters of large cities and resorts, bathing and toilet facilities are limited. Except for quite recent installations, French plumbing is likely to be decidedly inefficient. Many houses even in large towns have no bathrooms, and in small towns many houses have no running water. In rural areas latrines, often quite unsanitary, are usually the only toilet facility. (See also e. (2)(b) --- sewage disposal.)

f. Animal Diseases. There is little information available. Within recent years a few deaths from anthrax and rabies have been reported, but it is not considered that these will be of importance to troops in France. An epidemic of chicken pest is reported to have ravaged the poultry flocks in Alsace in the spring of 1942, but it was checked by quarantine measures of the occupying authorities. Hoof-and-mouth disease was imported from Morocco in 1937, but was controlled, and has not been reported since.

French departments are required to maintain anti-rabies services and veterinary services, although their operation has probably been cut down by shortage of personnel and equipment. The animal population has also been considerably reduced, by the shortage of fodder and by German requisitions.

g. Laws. The principal laws concerning public health and sanitation have been covered in the preceding paragraphs. Texts of the most important laws up to 1930 will be found in the Annexes (appendices) of L'hygiène publique en France (Paris, 1930). The texts of all public health laws and regulations from 1930 to 1940 are collected in the semi-annual Bulletin du Ministère de la Santé Publique.

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TABLES

TABLE NO. I

MUNICIPAL WATER SUPPLIES IN FRANCE

AMIENS: Municipal; wells and springs at Pont de Metz about 6 kilometers (3.7 miles) from the city. The water is ordinarily conducted through iron pipes by gravity, but pumps are sometimes used to increase the supply.

ANGERS: Municipal; Loire River; slow sand filtration. The impounding reservoirs have a capacity of 6,000 cubic meters (1,585,000 U. S. gallons). The water is said to leave a nonadhering scale in boilers.

AURILLAC: Municipal; Springs of Velzic in the valley of the Jordanne River about 6-1/2 miles from the city. The discharge varies from 26 to 32 gallons per second according to the season. It is conveyed to the city through iron conduits. Two impounding reservoirs have a combined capacity of 6,200 cubic meters (1,640,000 U. S. gallons). No treatment.

BESANCON: Municipal. Three sources of supply: (a) Infiltration gallery 130 meters (427 feet) long at Arcier; (b) Rain water collected in concrete pipes in the forest at Aglans, 11 kilometers (6.8 miles) from the city; (c) wells 6 meters (20 feet) deep in alluvial soil 50 meters (164 feet) from the bank of the Doubs River. Arcier water treated with "Javelle water"; water from alluvial soil is slow sand-filtered). Five reservoirs have a total capacity of 9,800 cubic meters (2.6 million U. S. gallons).

CAEN: Springs of Moulines, 23 kilometers (14 miles) from the city. The water is impounded in two reservoirs with a combined capacity of 11,000 cubic meters (2,906,000 U. S. gallons). It is said to form deposits in boilers and pipes.

CABORS: Municipal; springs at Fontaine des Chartreux; no treatment. Collecting reservoirs have a capacity of 5,000 cubic meters (1,321,000 U. S. gallons). The water is calcareous but is said to leave no deposits in pipes; is suitable for use in boilers.

CALAIS: Societe General des Eaux de Calais; 16 artesian wells from 40 to 60 meters (131 to 197 feet) deep in the communal forest of Guines about five miles south of the city. Three reservoirs which are metal tanks, store 5,200 cubic meters (1,374,000 U. S. gallons) of water. No treatment. No deposit is formed in cold water pipes, but it is reported that it forms in hot water pipes.

CHATEAUROUX: Municipal; three springs: Fontaine Bovry, Fontaine des Religieuses, and Fontaine du Jardin. Combined flow is 68 liters per second (1,552,000 U. S. gallons per day). No treatment. The water is said to form a scale in boilers but does not corrode nor leave deposits in pipes.

CHERBOURG: Municipal; Divette River. The water is impounded in the La Fauconniere Reservoir and then filtered through sand. The maximum available supply is 6,000 cubic meters (1,585,000 U. S. gallons) per day. The French Naval Arsenal at Cherbourg also obtains its supply from the Divette River in the Quincampoix Valley about one mile from Cherbourg. Water intended for drinking purposes at the arsenal is sterilized by heat. The city water is reported to cause no corrosion of boilers or pipes.

CLERMONT-FERRAND: Municipal; three springs and River Allier. Marpou and Huhn Springs supply an impounding reservoir with a capacity of 2,000 cubic meters (528,000 U. S. gallons). Les Combes Spring is directly connected with the distribution system. Industrial water is supplied from the River Allier and stored in two impounding reservoirs with a combined capacity of 4,500 cubic meters (1,200,000 U. S. gallons).

CONCARNEAU: Municipal; wells; slow sand-filtration; capacity of reservoirs is 1,000 cubic meters (264,000 U. S. gallons).

DIEPPE: Supply obtained from spring at Gouffre in the valley of the Scie at St. Aubin-sur Scie, about six kilometers (3.7 miles) from the city. The water is conveyed to Dieppe by gravity through an underground gallery. No treatment.

DIJON: Three springs; Rosoir and Ste. Fey which are the property of Dijon, and Chat, which is owned by the French Government. These springs are in the valley of the Suzon River about 18 kilometers (11 miles) from the city. They furnish about 100,000 cubic meters (26 million U. S. gallons) per day in winter, but only 5,000 cubic meters (1,320,000 U. S. gallons) in dry weather. At such times, an auxiliary supply is obtained from Monceuil Spring in the valley of the Ouche River. Both supplies are said to deposit lime in pipes and boilers. Hardness varies from 210 to 230 parts per million. The water is sterilized with "Javelle water" at times.

DINARD: Municipal; lakes, La Garde and Le Moulin Neuf, in the communes of La Richardais and Pleurheit. The supply is treated with alum and filtered through slow sand filters. The total reservoir capacity is 147,000 cubic meters (39 million U. S. gallons).

DOUARNENEZ: Municipal; wells 7 kilometers (4.3 miles) from the city; no treatment. The capacity of the reservoirs is 1,500 cubic meters (3,960,000 U. S. gallons).

DUNKERQUE (Dunkirk): Societe des Eaux de Dunkerque; artesian wells in chalk strata at Houlle in the Pas-de Calais. No treatment. There are two reservoirs with a capacity of 5,000 cubic meters (1,321,000 U. S. gallons) each for emergency use, but no reservoirs for ordinary use. The water is hard and leaves deposits in pipes and boilers.

FOUGERES: Municipal; wells four meters (13 feet) deep; no treatment.

GRENOBLE: Municipal; infiltration galleries in post-glacial alluvium in the region of Rochefort about 12 kilometers (7.5 miles) from Grenoble in the basin of the Gresse and Drac Rivers. The flow is about 1,100 liters per second (25,106,000 U. S. gallons per day). The water is reported to form deposits in boilers and pipes, but is non-corrosive.

LE PUY: Municipal; springs in the region of Vourzae, a few miles from the city. One reservoir has a capacity of 3,000 cubic meters (793,000 U. S. gallons). The water is said to form no scale in boilers nor deposits in pipes and is not corrosive in boilers and pipes.

LILLE: Municipal. Springs at Emmerin, Ancoisne, Houplin, and Seclin. Water is collected in aqueducts and conducted to three reservoirs with a combined capacity of 31,500 cubic meters (8,321,000 U. S. gallons). It is treated with calcium hypochlorite but not filtered. The city also owns an additional supply known as the Arbonnoise supply which is utilized only for industrial purposes. The spring water is said to form scale in boilers and leaves deposits in pipes but causes no corrosion.

GUERET: Municipal; supply collected in a reservoir after filtering through subsoil; reservoir capacity is 700 cubic meters (185,000 U. S. gallons); no treatment. The water is clear and is said to cause no deposits.

LA ROCHELLE: Municipal. Water is collected in three galleries located at Varaize, Le Vivier and Lafond, respectively. The total volume supplied per 24 hours is about 282,500 cubic feet (2,113,000 U. S. gallons). Other galleries were being constructed (1924) to bring a larger supply to the city, the total available supply then being about 700,000 cubic feet (5,236,000 U. S. gallons). The water is calcareous and unless treated it leaves deposits in boilers and pipes.

LE HAVRE: Springs at St. Laurent de Brevedent and Radicatel, 12 kilometers (7.5 miles) and 34 kilometers (21 miles) from the city, respectively. The total discharge of the two springs is about 39,400 cubic meters (10.4 million U. S. gallons) per day. Reservoir capacity is 15,000 cubic meters (7.7 million U. S. gallons).

LIMOGES: Municipal; supply obtained from regions of La Crouzille and Puy Bertrand. No treatment. It is collected in three impounding reservoirs which have a total capacity of 12,000 cubic meters (3,170,000 U. S. gallons). The water is said to form scale in boilers and leave deposits in pipes, and causes some corrosion in boilers.

LOUDEAC: Municipal; source not given; capacity of reservoir 500 cubic meters (132,000 U. S. gallons); no treatment.

LYONS: Municipal. The supply comes from galleries, basins and wells dug on the banks of the Rhone immediately above Lyons in the communes of Caluire, Cuire, and Villeurbanne. There are two galleries, two basins and 30 wells on the right bank of the Rhone and 95 filtrating wells on the left bank. All the water comes from the Rhone River and filters through about 20 meters (66 feet) of sand and gravel to the wells and galleries. Sterilized with "Javelle water". It is said to form no deposits in pipes or boilers.

MARSEILLE: Municipal; River Durance near Cadenet, 83 kilometers (52 miles) from the city. The aqueduct which conducts the water to the city delivers on an average 12,000 liters per second (274 million U. S. gallons per day). The water is clarified by standing in a settling basin of 3,000,000 cubic meters (792,510,000 U. S. gallons) capacity, and passes to the mains without further treatment. It is said to form scale in boilers but does not cause much corrosion.

MAYENNE: Municipal; artificial lakes in suburbs of city and Mayenne River; no treatment; capacity of reservoirs is 600 cubic meters (159,000 U. S. gallons). The water from the lakes is slightly turbid after storm. River water has a yellow color and is said to be corrosive when used in boilers.

MILLAU: Municipal; Mere de Dieu Springs and River Tarn. Tarn water is stored in the Troussy Reservoir.

MONTPELLIER: River Le Lez near Berriassien; no treatment except sedimentation in reservoirs; ten reservoirs with total capacity of 6,100 cubic meters (1,611,000 U. S. gallons).

MULHOUSE: Three wells 70 to 110 meters (230 to 361 feet) deep and one spring, all situated on municipal property; total yield about 7,000 cubic meters (1,849,000 U. S. gallons) per day; two reservoirs with combined capacity of 1,700 cubic meters (449,000 U. S. gallons). The water is reported to form heavy scale in boilers.

NANCY: Municipal; two separate supplies; one is from the Moselle River which is used for industrial purposes; and numerous springs near Nancy which furnish water for drinking purposes. There is no general distribution system for the spring water but it is conducted to fountains about 300 meters (984 feet) apart, located in the streets, from which it is carried in individual containers. The river water is stored in a reservoir with a capacity of 24,000 cubic meters (6,340,000 U. S. gallons).

BORDEAUX: Municipal; springs. The springs of Budos and Taillan 41 and 12 kilometers (25 and 7.5 miles) from the city, respectively, have a combined flow of 670 liters per second (15,292,000 U. S. gallons per day). The water from each spring is conducted through masonry aqueducts to the city and stored in two reservoirs with a combined capacity of 16,400 cubic meters (4,332,000 U. S. gallons). No treatment. The water is said to leave no deposits in pipes or boilers nor cause corrosion.

BOULOGNE-SUR-MER: Municipal, but operated by La Compagnie Generale des Eaux; two springs, one at Tingry and the other at Molinet about six miles from the city. The combined flow of these springs is about 7,000 cubic meters (1,850,000 U. S. gallons) per day. Water from other small springs forms an emergency supply. The present supply (1924) is inadequate and steps are being taken to obtain water from additional sources. The water is derived from chalk and is consequently hard, leaving deposits in pipes and boilers.

BOURGES: Municipal; two wells 5 meters (16 feet) deep and one well 30 meters (98 feet) deep in the St. Outrille district; four reservoirs with total capacity of 6,800 cubic meters (1,796,000 U. S. gallons). The water is said to leave calcareous deposits in pipes.

BREST: Elorn River. Treated by filtration.

NANTES: Municipal; Loire River; slow sand filtration. The capacity of the impounding reservoirs is 20,000 cubic meters (5,280,000 U. S. gallons). The water leaves a nonadhering deposit in boilers.

NEVERS: Municipal; eight collecting wells in sand alluvium along the Loire River; wells are 7.75 meters (25 feet) deep and two meters (6.6 feet) in diameter; no treatment. Daily draft of wells is 4,000 cubic meters (1,057,000 U. S. gallons). The water is said to form deposits in pipes but does not corrode boilers.

NICE: Municipally owned but leased to the Compagnie Generale des Eaux for operation. There are two sources of supply, Sainte Thecle Spring in the valley of the Paillon furnishing one-third, and the Vesubu River two-thirds. The spring water is brought to the city in enclosed masonry conduits. River water passes through an open canal for 35 kilometers (22 miles) and filtered through sand. Both supplies are sterilized with ozone before passing into the mains. The sterilized water is used only for domestic consumption. A separate system exists which furnishes river water for industrial and public service purposes. This water is not sterilized. The daily consumption is 80 gallons of drinking water and 90 gallons of unfiltered water per capita. Water is also supplied to towns between Villefranche and Monton.

PARIS: Municipally owned but leased to private companies for operation; two independent systems of distribution, the "private system" furnishing spring water and filtered river water for drinking purposes and the system supplying raw river water for industrial and general use. Spring water is brought to Paris through five aqueducts: the Dhuys aqueduct, 81 miles long, from Pargny-la-Dhuys, 4 to 6 million gallons per day; the aqueduct of the Vanne, 108 miles long, 26 to 31 million gallons per day; the aqueduct of the Avre, 63 miles long, from Rueil la Gadeliere, 16 to 29 million gallons per day; the aqueduct of the Loing and Lumain, 45 miles long, from Montigny-sur-Loing, 21 to 26 million gallons per day; and the aqueduct of the Voulzie under construction in 1924, 28 miles long, from Provins to Moret where it joins the aqueduct of the Loing and Lumain, about 26 million gallons per day. The total available supply of spring water is estimated at from 92 to 118 million gallons per day depending on the season. Another project under consideration would furnish about 250 million gallons per day from wells in the valley of the Loire between Gien and Nevers. This project was authorized in 1931.

The spring water supply is supplemented by filtered water from the Marne and Seine Rivers. Two pumping and filtration plants, one on each river, are capable of furnishing a total of 53 million gallons per day. This supply is treated either with ozone or hypochlorite of lime.

Water for industrial and general purposes is pumped from the Villete, Marne and Seine Rivers by numerous pumping plants. The combined capacity of these plants is from 175,000 to 200,000 U. S. gallons per day.

The total capacity of the seven reservoirs that impound spring water for the "private system" is 599,190 cubic meters (158,290,000 U. S. gallons); the capacity of the eight reservoirs that impound river water is 187,393 cubic meters (49,504,000 U. S. gallons).

Each street in Paris is provided with two systems of canalization, one for drinking water ("private system") and the other for river water. Ninety-four per cent of these canalizations are placed in the municipal sewers. A special system supplies water for fire fighting.

The filtered river water is said to form deposits in pipes, but neither spring nor river water has any corrosive action on lead pipes.

QUIMPERLE: Municipal; wells four meters (13 feet) deep; no treatment. Capacity of reservoirs is 1,000 cubic meters (264,000 U. S. gallons). The water is said to cause no corrosion.

RENNES: Municipal; La Loyeance and La Minette Rivers; no treatment. Capacity of reservoirs is 62,000 cubic meters (16,400,000 U. S. gallons). The water is said to be noncorrosive.

ROANNE: Municipal; source not known.

ROUBAIX and TOURCOING: The supply is owned jointly by these two cities. There are two sources of supply, the River Lys which is used for industrial purposes, and spring water for drinking purposes. The river water is filtered through sand and gravel, but the spring water is untreated. The river water reservoir has a capacity of 11,000 cubic meters (2,906,000 U. S. gallons). Both supplies are derived from calcareous formations and are consequently hard.

ROUEN: Municipal; springs. About 75 per cent of the supply comes from springs at Fontaine-sous-Preaux and the remainder from Darnetal. The water is sterilized with "Javelle water".

ST. ETIENNE: Municipal; Furan and Lignon Rivers. Water from the Furan River, used chiefly for drinking purposes, is impounded in two reservoirs with a total capacity of 2,970,000 cubic meters (785 million U. S. gallons). A dam near Lapteon in the Lignon River impounds 5,500,000 cubic meters (1,453 million U. S. gallons), from which water flows through an aqueduct 54 kilometers (34 miles) long to the city. No treatment of either supply. Water from the Lignon River is said to be slightly colored and corrosive in boilers.

ST. MALO: Municipal; lake reservoir of Sainte Suzanne, 250,000 cubic meters capacity (66 million U. S. gallons); slow sand filtration.

PERIGUEUX: Municipal; springs at Le Toulon about two kilometers (1.2 miles) from the city, near the right bank of L'Isle Creek. The water is impounded in two reservoirs with a total capacity of 7,500 cubic meters (2 million U. S. gallons) and distributed without treatment or filtration. The water is calcareous and produces scale in boilers and leaves deposits in pipes.

POITIERS: Municipal; collecting wells about 10 meters (33 feet) deep in the district of Lovasseau. The water is conducted to Poitiers by gravity through a pipe line 24 kilometers (15 miles) long. The water is hard and is said to produce deposits in pipes and form scale in boilers.

SAINT NAZAIRE-SUR-LOIRE: Municipal; supply from La Grande Briere (peat bog); slow sand filtration. Total reservoir capacity is 2 million cubic meters (528 million U. S. gallons). The water is said to cause no corrosion.

SAMUR: Loire River. For character of Loire River, see Nantes, which is 75 miles down stream.

STRASBOURG: Municipal; five wells a few miles from the city near the Rhine River. The underground reservoir at Oberhausbergen contains 16,660 cubic meters (4,400,000 U. S. gallons). Rapid sand filtration. The water is hard and forms scale in boilers, but causes very little corrosion.

TOULOUSE: Clavefont Springs and two infiltration galleries which receive water from the Garonne River. Water from one of the galleries is filtered through sand; none of the supply is treated chemically.

TOURCOING: (See ROUBAIX, and also RONCQ)

TOURS: Cher River; total reservoir capacity 28,000 cubic meters (7,400,000 U. S. gallons).

VALENCIENNES: Municipal; spring water is collected in galleries in the region lying between Aulnoge and Marly. One reservoir of 400 cubic meters (106,000 U. S. gallons) capacity stores the supply. Treatment consists of addition of "Javelle water". The water forms scale in boilers and leaves deposits in pipes.

RONCQ: Waterworks supply water for industries of towns of Roubaix-Tourcoing. Water is drawn from river heavily polluted with industrial effluents. Following method of treatment has been found satisfactory: Water is settled for 2 hours, then treated with ferric sulfate and a hypochlorite in 2 coagulation tanks, with detention periods of 1 hr. and 1/2 hr. It is passed through filter at 10 cm. per sq. m. per hr. and through a second filter at 5 cm. per sq. m. per hr.

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The water supply for the following cities is chlorinated by the Verdunisation method: Lyons, Rheims, Carcassonne, Ligny-en-Barrois, Bar-le-Duc, and Aix-les-Bains.

TABLE NO. II

HOSPITALS IN FRANCE - 1933 RESTRICTED

Number of Beds

Department	Number of hospitals	Number of Beds					
		Sick					
		Civilians	Military	Infirm aged & incurables	Children	Staff	Total
1. Ain	35	795	112	557	99	311	1,874
2. Aisne	35	1,209	146	1,092	330	398	3,175
3. Allier	25	1,262	258	908	284	428	3,140
4. Alpes (Basses-)	17	412	16	357	52	124	961
5. Alpes (Hautes-)	7	299	52	177	32	124	684
6. Alpes-Maritimes	25	1,932	256	545	72	229	3,034
7. Ardeche	17	372	32	540	53	205	1,202
8. Ardennes	12	691	57	743	88	244	1,823
9. Ariege	12	424	63	359	18	86	950
10. Aube	15	379	30	415	35	178	1,037
11. Aude	9	703	101	577	90	179	1,650
12. Aveyron	12	600	65	545	77	174	1,461
13. Belfort	1	188	-	-	-	41	229
14. Bouches-du-Rhone	28	2,985	165	1,674	15	435	5,274
15. Calvados	21	869	909	1,059	236	254	3,327
16. Cantal	18	286	-	598	25	132	1,041
17. Charente	12	613	111	493	161	181	1,559
18. Charente-Inferieure	9	1,131	111	526	153	417	2,338
19. Cher	22	426	2	559	85	159	1,231
20. Correze	14	409	157	327	29	119	1,041
21. Corse	3	216	-	54	10	65	345
22. Cote d'Or	26	1,559	296	627	189	464	3,135
23. Cotes du Nord	13	834	173	994	74	300	2,375
24. Creuse	13	212	9	413	24	78	736
25. Dordogne	32	559	118	275	79	136	1,167
26. Doubs	14	765	335	293	76	338	1,807
27. Drome	13	682	151	643	64	207	1,747
28. Eure	21	1,175	123	1,113	97	380	2,888
29. Eure-et-Loire	26	897	162	587	30	315	1,991
30. Finistere	25	1,069	61	1,195	306	551	3,182
31. Gard	24	960	133	949	118	432	2,592
32. Garonne (Haute)	13	910	-	886	56	50	1,902
33. Gers	15	368	60	426	113	181	1,148
34. Gironde	20	2,794	49	1,175	152	952	5,122
35. Herault	30	1,941	347	1,588	191	465	4,532
36. Ille-et-Vilaine	26	1,525	52	1,998	209	478	4,262
37. Indre	16	553	73	365	83	195	1,269
38. Indre-et-Loire	16	1,573	238	805	108	343	3,067
39. Isere	32	2,103	110	697	41	785	3,736
40. Jura	16	610	45	233	12	206	1,106
41. Landes	14	398	54	337	38	121	948
42. Loir-et-Cher	13	626	59	739	167	247	1,838
43. Loire	41	2,392	104	1,663	245	787	5,191
44. Loire (Haute)	23	410	7	797	58	216	1,488
45. Loire-Inferieure	21	1,729	14	1,530	147	714	4,134
46. Loiret	25	1,079	168	1,181	206	527	3,161
47. Lot	2	162	36	159	12	60	429
48. Lot-et-Garonne	21	371	17	397	14	161	960
49. Lozere	10	106	26	200	9	73	414
50. Maine-et-Loire	48	1,225	228	1,735	260	698	4,146
51. Manche	30	1,079	76	1,224	477	346	3,202

Department	Number of hospitals	Number of Beds					
		Sick		Infirm aged & incurables	Children	Staff	Total
		Civilians	Military				
52. Marne	20	884	802	1,663	649	625	4,623
53. Marne (Haute)	14	513	155	536	16	204	1,424
54. Mayenne	29	736	39	1,011	208	282	2,276
55. Meurthe-et-Moselle	27	2,147	144	2,062	542	1,153	6,048
56. Meuse	15	549	467	678	160	274	2,128
57. Morbihan	15	980	117	1,136	117	445	2,795
58. Moselle	35	2,001	77	1,145	175	745	4,143
59. Nievre	14	598	94	496	145	207	1,540
60. Nord	104	4,746	154	8,625	828	1,925	16,278
61. Oise	30	929	241	1,319	226	378	3,093
62. Orne	17	934	90	820	110	297	2,251
63. Pas-de-Calais	24	1,798	100	2,517	244	524	5,183
64. Puy-de-Dome	30	1,191	251	1,502	255	227	3,426
65. Pyrenees (Basses)	13	698	146	420	13	274	1,551
66. Pyrenees (Hautes)	6	381	142	268	52	96	939
67. Pyrenees-Orientales	13	532	92	304	192	76	1,196
68. Rhin (Bas-)	37	3,380	198	1,300	190	1,497	6,565
69. Rhin (Haut-)	54	2,829	32	2,419	318	1,079	6,677
70. Rhone	30	6,076	20	2,939	302	1,397	10,734
71. Saone (Haute)	6	328	79	142	22	139	710
72. Saone-et-Loire	34	979	264	739	184	363	2,529
73. Sarthe	37	783	171	1,017	70	468	2,509
74. Savoie	12	773	91	664	10	190	1,728
75. Savoie (Haute)	14	838	86	270	39	224	1,457
(Paris)	69	26,278	-	12,612	1,965	1,669	42,524
76. Seine (Banlieue)	19	-	48	2,410	-	109	2,567
77. Seine-Inferieure	44	3,786	359	3,263	289	1,514	9,211
78. Seine-et-Marne	25	1,156	244	1,144	77	479	3,100
79. Seine-et-Oise	40	3,715	102	1,809	98	1,065	6,789
80. Sevres (Deux-)	17	845	107	640	48	288	1,928
81. Somme	31	1,155	108	1,723	238	642	3,866
82. Tarn	7	430	105	532	146	132	1,345
83. Tarn-et-Garonne	13	422	132	353	43	170	1,120
84. Var	29	879	140	744	158	302	2,223
85. Vaucluse	59	1,317	118	1,083	49	442	3,009
86. Vendee	20	744	136	734	90	323	2,027
87. Vienne	11	700	388	583	133	203	2,007
88. Vienne (Haute-)	9	695	182	785	42	263	1,967
89. Vosges	29	1,213	187	1,516	110	456	3,482
90. Yonne	22	748	136	489	12	208	1,593
Totals: (90 departments)	2,062	126,553	12,511	101,741	14,164	36,643	291,612

TABLE NO. III

MEDICAL PERSONNEL IN FRANCE
Detailed for 1936 -- Totals for 1937.

Departments (Same as counties)	Medical doctors (1)	Surgeon dentists	Midwives	Departments	Medical doctors	Surgeon dentists	Midwives
Ain	161	29	184	Lot	87	11	43
Aisne	221	15	42	Lot-et-Garonne	140	34	89
Allier	321	62	113	Lozere	33	7	21
Alpes (Basses)	51	15	24	Maine-et-Loire	249	63	230
Alpes (Haute)	40	15	27	Manche	184	46	41
Alpes-Maritime	602	213	105	Marne	49	54	112
Ardeche	88	18	48	Marne (Haute)	97	21	105
Ardennes	120	26	91	Mayenne	96	16	53
Ariege	70	14	55	Meurthe-et-Moselie	284	104	138
Aube	143	36	52	Meuse	1100	19	115
Aude	197	28	83	Morbihan	178	27	108
Aveyron	140	35	63	Moselle	225	132	336
Belfort	49	20	40	Nievre	117	34	45
Bouches-du-Rhone	841	282	273	Nord	996	283	386
Calvados	208	63	80	Oise	193	49	65
Cantal	88	21	21	Orne	138	24	25
Charente	151	42	78	Pas-de-Calais	438	124	257
Charente-Inferieure	255	56	106	Pay-de-Dome	393	69	196
Cher	148	34	61	Pyrenees (Basses)	310	90	129
Correze	126	28	88	Pyrenees (Hautes)	116	32	79
Corse	116	19	31	Pyrenees (Orientales)	163	40	94
Cote-d'Or	204	57	124	Rhin (Bas-)	454	238	373
Cotes du-Nord	188	37	31	Rhin (Haut-)	226	142	318
Creuse	99	18	46	Rhone	765	281	243
Dordogne	188	48	81	Saone (Haute-)	98	30	106
Doubs	144	43	153	Saone-et-Loire	245	116	215
Drome	151	42	66	Sarthe	185	51	73
Eure	175	60	43	Savoie	122	40	72
Eure-et-Loir	124	30	84	Savoie (Haute-)	144	80	113
Finistere	260	57	159	Seine	5,940	2,505	1,082
Gard	225	52	100	Seine-Inferieure	459	117	147
Garonne (Haute-)	452	92	138	Seine-et-Marne	247	117	67
Gers	112	10	73	Seine-et-Oise	760	504	334
Gironde	716	229	272	Sevres (Deux)	139	34	84
Herault	436	56	152	Somme	234	72	96
Ille-et-vilaine	287	42	76	Tarn	155	38	38
Indre	134	23	52	Tarn-et-Garonne	101	19	41
Indre-et-Loire	240	53	100	Var	315	85	117
Isere	247	124	169	Vaucluse	168	67	75
Jura	102	32	122	Vendee	201	26	213
Landes	188	42	88	Vienne	150	34	130
Loir-et-Cher	124	33	65	Vienne (Haute-)	188	54	149
Loire	290	105	187	Vosges	152	29	107
Loire (Haute-)	83	22	50	Yonne	159	53	40
Loire-Inferieure	427	88	198				
Loiret	188	51	72				
				Grand Total 1936 --	25,930	8,558	11,286
				Grand Total 1937 --	27,427 (2)	9,157	11,873

(1) Not including military doctors.
(2) Not including 112 Offices of health.

TABLE NO. IV

MORTALITY BY CAUSE IN FRANCE AND THE UNITED STATES

(Rates per 100,000 inhabitants)

Cause of Death	FRANCE				UNITED STATES			
	Deaths		Rates		Deaths		Rates	
	1935	1936	1935	1936	1936	1937	1936	1937
Typhoid paratyphoid	1,071	1,052	2.6	2.5	3,182	2,743	2.5	2.1
Typhus fever	5	11	0.0	0.0	115	134	0.1	0.1
Smallpox	15	10	0.0	0.0	35	34	0.0	0.0
Measles	721	1,010	1.7	2.4	1,267	1,501	1.0	1.2
Scarlet fever	326	279	0.8	0.7	2,493	1,824	1.9	1.4
Whooping cough	836	1,220	2.0	2.9	2,666	4,981	2.1	3.9
Diphtheria	1,605	1,325	3.8	3.2	3,065	2,637	2.4	2.0
Influenza	7,677	4,487	18.3	10.7	33,811	38,005	26.3	29.4
Plague	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Tuberculosis of the respiratory system	44,658	43,161	106.5	103.0	65,043	63,330	50.6	49.0
Other forms of tuberculosis	6,792	6,319	16.2	15.1	6,484	5,994	5.0	4.6
Syphilis	266	296	0.6	0.7	12,612	13,221	9.8	10.2
Malaria	163	120	0.4	0.3	3,943	2,729	3.1	2.1
Other infectious or parasitic diseases	4,978	4,628	11.9	11.0	14,081	12,825	11.0	9.9
Acute poliomyelitis	(Bracketed figures for U.S. included in "Other" immediately above)				(780	(1,461	(0.6	(1.1
Cerebrospinal meningitis					(3,020	(2,208	(2.4	(1.7
Cancer and other malignant tumors	39,762	40,229	94.8	96.0	142,613	144,774	111.0	112.0
Tumors, non-malignant, or nature not specified	4,291	4,038	10.2	9.6	6,513	6,383	5.1	4.9
Chronic rheumatism and gout	347	336	0.8	0.8	1,830	1,751	1.4	1.4
Diabetes mellitus	4,558	4,291	10.9	10.2	30,406	30,587	23.7	23.7
Alcoholism (acute or chronic)	1,182	1,107	2.8	2.6	3,714	3,305	2.9	2.6
Other general diseases and chronic poisonings	3.775	3,786	9.0	9.0	23,781	22,940	18.5	17.7
Progressive locomotor ataxia and general paralysis of insane	1,817	1,689	4.3	4.0	5,453	5,055	4.2	3.9
Cerebral hemorrhage, cerebral embolism and thrombosis	49,800	48,474	118.7	115.7	116,562	111,753	90.8	86.5
Other diseases of nervous system and organs of special sense	15,855	14,948	37.8	35.7	21,523	19,445	16.8	15.0
Diseases of the heart	64,989	64,809	155.0	154.6	341,350	346,401	265.8	268.0
Other diseases of circulatory system	14,317	13,781	34.1	32.9	30,325	29,181	23.6	22.6
Bronchitis	7,192	6,881	17.1	16.4	4,342	3,980	3.4	3.1
Pneumonias	28,502	28,251	68.0	67.4	119,378	110,009	93.0	85.1
Other diseases of the respiratory system (tuberculosis excepted)	37,545	35,812	89.5	85.4	11,200	10,592	8.7	8.2
Diarrhea and enteritis	6,676	5,410	15.9	12.9	20,951	18,925	16.3	14.6
(Same-under 2 yrs.)	.	.	.	.	15,612	14,406	7.3	6.5

MORTALITY BY CAUSE IN FRANCE AND THE UNITED STATES

(cont.)

	FRANCE				UNITED STATES			
	Deaths		Rates		Deaths		Rates	
	1935	1936	1935	1936	1936	1937	1936	1937
Appendicitis	1,639	1,604	3.9	3.8	16,480	15,340	12.8	11.9
Diseases of liver and biliary passages.	12,303	12,161	29.3	29.0	21,149	21,170	16.5	16.4
Other diseases of digestive system .	12,633	12,333	30.1	29.4	34,996	33,941	27.2	26.3
Nephritis.	18,845	18,623	44.9	44.3	106,865	102,877	83.2	79.6
Other diseases of genito-urinary system	4,314	4,389	10.3	10.5	20,014	19,642	15.6	15.2
Puerperal septicemia*	529	397	0.8	0.6	4,506	3,644	2.1	1.7
Other diseases of pregnancy, childbirth and the puerperal state. . . .	959	910	1.3	1.4	7,676	7,125	3.6	3.2
Diseases of the skin and cellular tissue and of bones and organs of locomotion	1,545	1,483	3.7	3.5	3,691	3,349	2.9	2.6
Congenital debility, malformations, premature birth, other diseases of early infancy. . . . . .*	12,930	12,130	20.2	19.2	63,854	63,349	29.8	28.8
Senility..	83,857	80,947	199.9	193.1	11,367	9,904	8.9	7.7
Suicide.	8,430	8,185	20.1	19.5	18,294	19,294	14.2	14.9
Homicide	514	466	1.2	1.1	10,232	9,811	8.0	7.6
Violent and accidental deaths (suicide and homicide excepted)	20,607	19,220	49.1	45.9	110,249	105,348	85.8	81.5
Cause of death not specified or ill defined.	129,553	131,709	308.9	314.3	21,111	20,593	16.4	15.9
Total:	658,379	642,318	1569.8	1532.6	1,479,228	1,450,427	1151.8	1122.1

*Rates per 1,000 living births.

Rapport Epidemiologique Annuel - League of Nations, Geneva, 1939.

MAPS

Average Actual Temperatures (graph).

Average Annual Rainfall.

Density of Population.

Pluviometrical Fractions.

The departments of France.

Regional division, 1941.

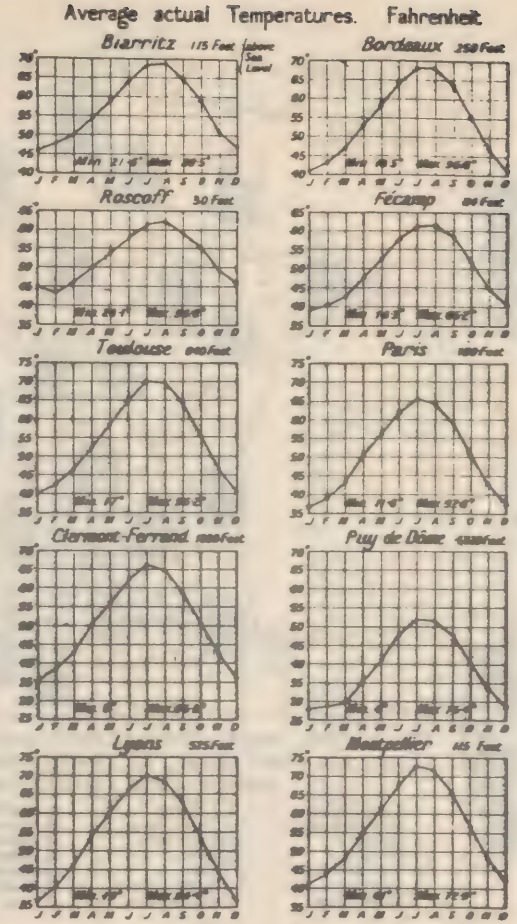
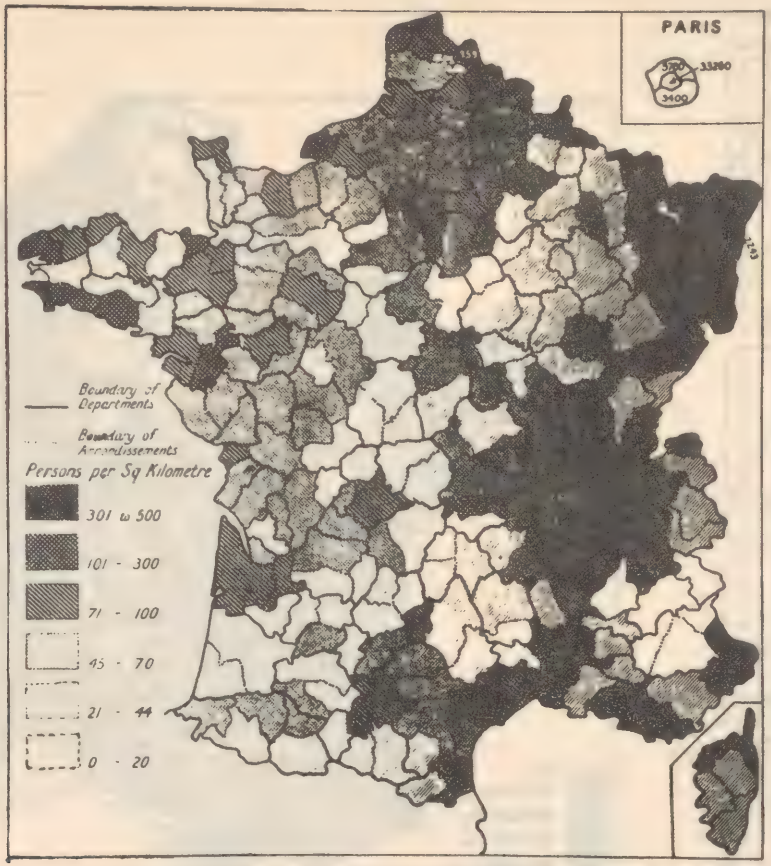


FIG. II. TYPICAL TEMPERATURE GRAPHS.
NOTE: THE METEOROLOGICAL STATION AT BORDEAUX LIES ON THE HIGH GROUND TO THE EAST OF THE RIVER.

SHOWING AVERAGE ANNUAL RAINFALL OF FRANCE (AFTER ANGOT)



DENSITY OF POPULATION BY ARRONDISSEMENTS
(Based on the Census figures for 1926)

Erratum : *The arrondissement of Rouen has a density between* 101 *and* 300, *not* 71-100.

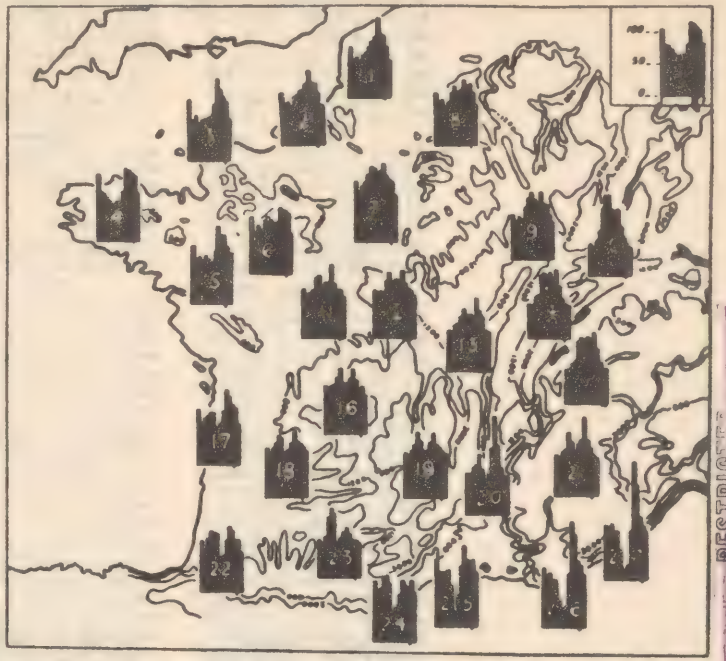


FIG. 8. THE GRAPHS INDICATE PLUVIOMETRICAL FRACTIONS (AFTER ANGOT) FOR EACH MONTH, IN THOUSANDTHS OF THE TOTAL ANNUAL RAINFALL, FOR TYPICAL DEPARTMENTS

1 Pas de Calais	8 Ardennes	15 Haute-Savoie	22 Basses-Pyrénées
2 Seine-Inférieure	9 Haute-Marne	16 Creuse	23 Haute-Garonne
3 Manche	10 Haut-Rhin	17 Gironde	24 Aude
4 Finistère	11 Indre	18 Dordogne	25 Hérault
5 Loire-Inférieure	12 Cher	19 Cantal	26 Var
6 Mayenne	13 Saône-et-Loire	20 Ardèche	27 Alpes Maritimes
7 Seine-et-Oise	14 Haute-Saône	21 Istre	*Contour heights in feet*

The departments of France

except Corsica

Regional division, 1941

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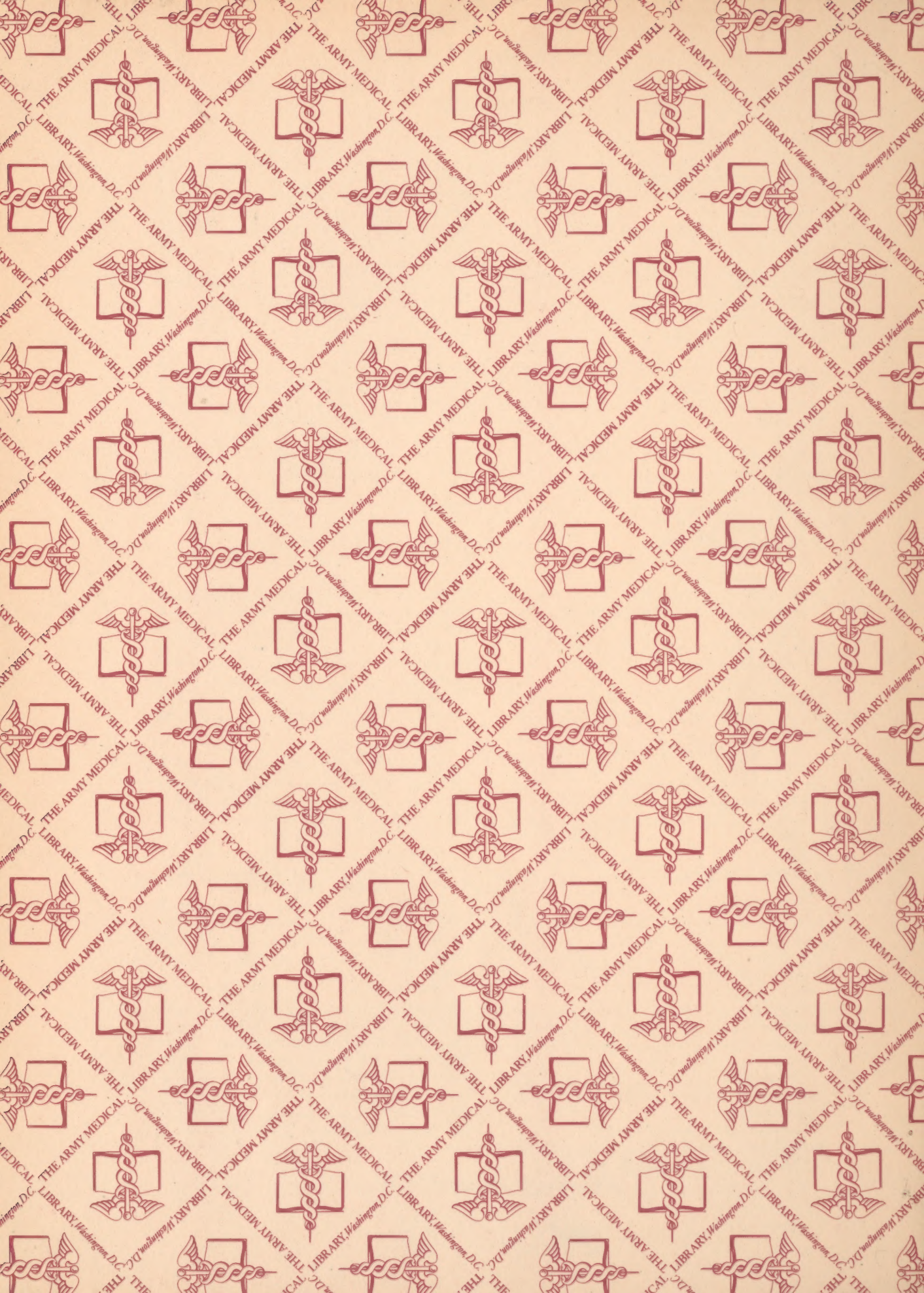
PUBLIC HEALTH

FRANCE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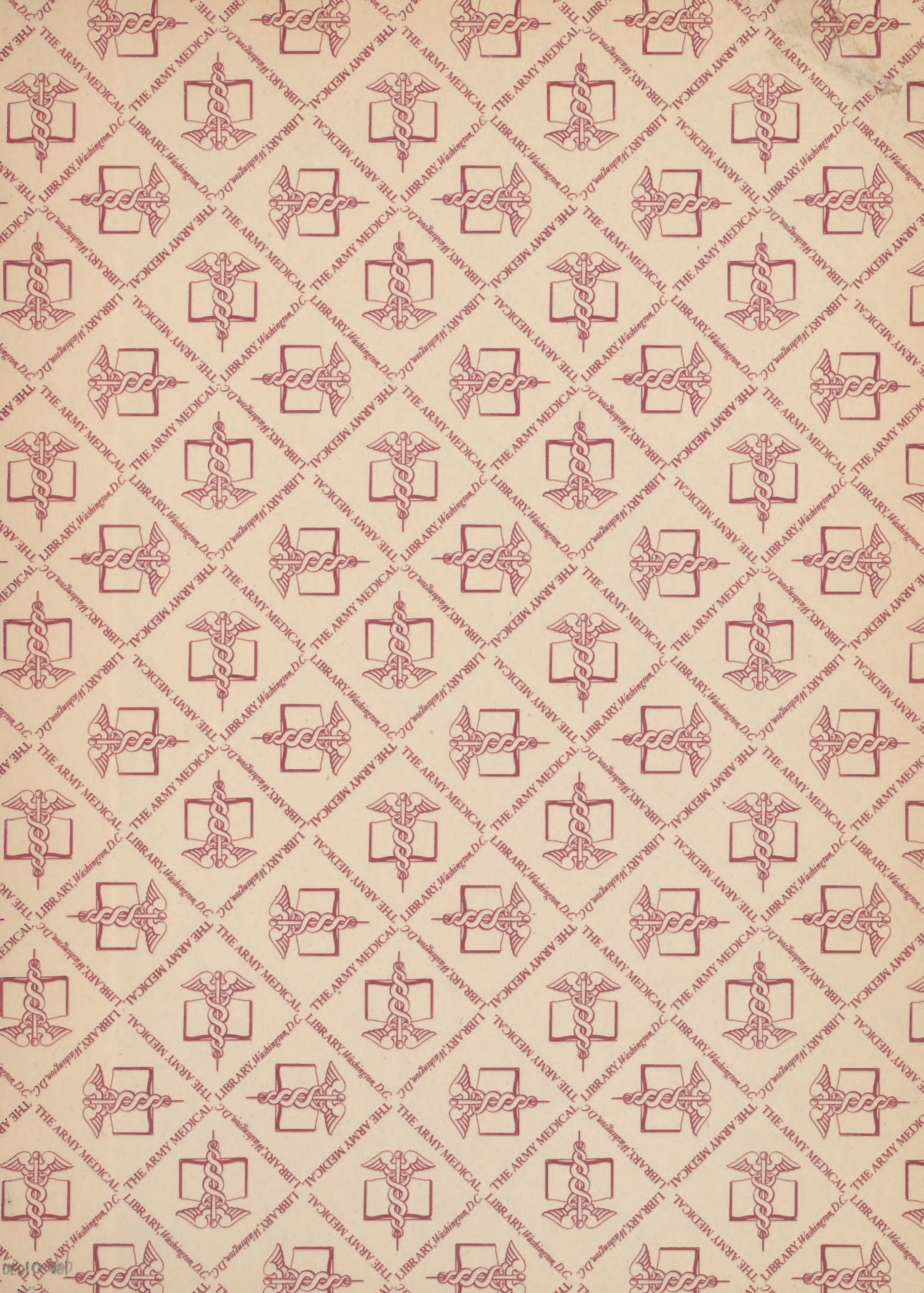
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